REMARKS

The Applicants have carefully reviewed the Office Action mailed March 30, 2010 and thank Examiner Saad for her detailed review of the pending claims. In response to the Office Action, Applicants have amended claims 1, 30, and 31. Claim 1 has been amended to include the recitations previously presented in claim 21, now cancelled without prejudice or disclaimer. Claim 30 has been amended to correct antecedent basis. Support for the amendment to claim 31 can be found at least in Paragraph [0020] of the application. No new matter has been added. Accordingly, claims 1, 19-20, and 22-31 remain pending in this application.

At least for the reasons set forth below, Applicants respectfully traverse the foregoing rejections. Further, Applicants believe that there are also reasons other than those set forth below why the pending claims are patentable, and reserves the right to set forth those reasons, and to argue for the patentability of claims not explicitly addressed herein, in future papers. Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicants expressly do not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

Applicants respectfully request reconsideration of the present application in view of the above amendment and the following remarks.

Claim Rejection – 35 U.S.C. § 112

The Examiner rejected claim 30 under 35 U.S.C. § 112 based on insufficient antecedent basis. More specifically, the Examiner rejected claim language directed to "the balancing of the hollow shaft." In the interest of furthering prosecution, claim 30 has been amended to recite "a balancing of the hollow shaft."

Claim Rejection – 35 U.S.C. § 103

1. Lürenbaum (DE725619) in view of Damsohn (WO 2005/092562)

Claims 1, 19-27, and 31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lürenbaum in view of Damsohn.

Independent Claim 1

Independent claim 1 has been amended to recite, in part, "securing the at least one balancing weight to the at least one location by soldering, wherein a flux-free solder is applied as a foil." (Emphasis added). Lürenbaum, alone or in combination with Damsohn, fails to teach, suggest, or disclose each recitation found in the claim as amended.

"To establish *prima facie* obviousness of a claimed invention, all the claim recitations must be taught or suggested by the prior art." *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). M.P.E.P. § 2143.03. *Accord.* M.P.E.P. § 706.02(j). According to a translation of Lürenbaum, Lürenbaum discloses that imbalance masses are welded on in the form of a sheet metal on the shaft body, which can be soldered or glued. (Lines 1-3). However, Lürenbaum fails to disclose the use of a flux-free solder. Nonetheless, the Examiner states that "since Lürenbaum does not disclose using flux, it is the Examiner's position that flux is not used in the soldering of the balancing weights." (*See* Office Action p. 3.) This argument is insufficient to establish a *prima facie* case of obviousness. The Examiner must establish that all of the claim recitations are taught or suggested in the prior art. To meet this burden, the Examiner cannot interpret Lürenbaum's silence on the specific flux used as verification that Lürenbaum discloses a flux-free solder. The Examiner must show that "wherein a flux-free solder is applied as a foil," is taught or suggested in the prior art.

Damsohn fails to cure at least the deficiencies of Lürenbaum. That is, Damsohn does not teach, suggest, or disclose at least "securing the at least one balancing weight to the at least one location by soldering, wherein a flux-free solder is applied as a foil." Damsohn discloses the use of a solder film for soldering parts, particularly plates of heat exchangers. (*See* Paragraph [0001]).

However, like Lürenbaum, Damsohn fails to disclose the use of a flux-free solder. Again, the silence of a reference with respect to the use of a flex-free solder does not suggest that flux-free solder is, in fact, disclosed. To establish a *prima facie* case of obviousness, the Examiner must show that "wherein a flux-free solder is applied as a foil," is taught or suggested in the prior art.

Additionally, Applicants assert that Lürenbaum does not disclose "a process for fixing at least one balancing weight to at least one location on a hollow shaft," as recited in claim 1. The specification, as translated, does not explicitly disclose the use of imbalance masses on hollow shafts. Further, Figs. 1a-1c also fail to explicitly disclose the use of hollow shafts. Figures 1a-1c, reproduced below, merely illustrate dashed lines running parallel and perpendicular to the longitudinal axis of the shaft. However, it would not be obvious to one of ordinary skill in the art that the dashed lines represent a hollow shaft. Instead, the dashed lines could be used to determine or represent the location on the surface of the shaft where the balancing weights should be positioned. Accordingly, Lürenbaum fails to teach, suggest, or disclose "a process for fixing at least one balancing weight to at least one location on a hollow shaft."

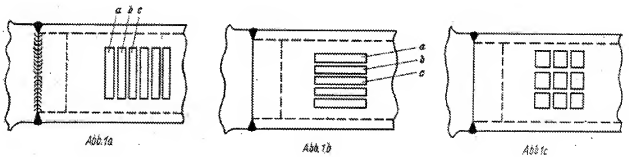

Abb. 1a Abb. 1b Abb. 1c

Damsohn also fails to cure this deficiency of Lürenbaum. That is, Damsohn does not teach, suggest, or disclose at least "a process for fixing at least one balancing weight to at least one location on a hollow shaft." Instead, Damsohn is directed to a solder foil for plates of heat exchangers. (*See* Paragraph [0001]). Accordingly, Damsohn does not disclose fixing a balancing weight to a hollow shaft.

For at least these reasons, Damsohn does not cure the deficiencies of Lürenbaum. Therefore, independent claim 1 is patentable over Lürenbaum in view of Damsohn. Applicants respectfully request that the rejection of the claim be withdrawn.

Lürenbaum Teaches Away From the Recitations Found in Independent Claim 1

Lürenbaum teaches away from the recitations found in independent claim 1. More specifically, Lürenbaum teaches away from "securing the at least one balancing weight to the at least one location by soldering..."

The Lürenbaum specification, as translated, suggests that gluing balancing sheets on the shaft achieves a higher fatigue strength in the adhesion joint, than, for example, soft soldering can reach. This is because the fatigue strength of the shaft does not become affected by sticking as with solders. (*See* translation, lines 11-13). Thus, Lürenbaum directly teaches away from "securing the at least one balancing weight to the at least one location by soldering." Such a statement is even more pertinent to this application because the balancing weights are secured "on a hollow shaft, for torque transmission at rotational speeds in the range of 3000 rpm to 12000 rpm in a drive system for a vehicle." Under such conditions, the fatigue strength of the shaft and also the joint where the balancing weight is soldered to the shaft is of increased significance because the shaft is hollow and more susceptible to dynamic forces.

Accordingly, Lürenbaum teaches away from at least this recitation of independent claim 1 by suggesting that using solder does not have the particular advantages associated with gluing, such as fatigue strength. Therefore, one of ordinary skill in the art would not have considered Lürenbaum when designing "a process for fixing at least one balancing weight to at least one location on a hollow shaft, for torque transmission at rotational speeds in the range of 3000 rpm to 12000 rpm in a drive system for a vehicle, comprising securing the at least one balancing weight to the at least one location by soldering..."

Lürenbaum and Damsohn are Incapable of Combination

Given the teachings of Lürenbaum and Damsohn, one of ordinary skill in the art at the time of the invention would not have combined the invention of Lürenbaum with the soldering film for heat exchangers disclosed in Damsohn. In fact, Lürenbaum and Damsohn are incapable of combination.

Lürenbaum is directed toward balancing unbalanced shafts. To balance the shafts, Lürenbaum discloses that the imbalance masses are welded on in the form of a sheet metal on the shaft body, which can be soldered or glued. (*See* translation, lines 1-3.) In contrast, Damsohn is directed to a solder film for soldering heat exchanger plates. (*See* Paragraph [0001]). More particularly, Damsohn discloses the use of soldering foil in the production of a stacked heat exchanger, wherein the stack is comprised of profiled separating plates arranged in an alternating fashion and solder foils. During production, the profiled separating plates are soldered to one another using the foil. (*See* Paragraph [0017]). The foil also has a defined contour adapted to the parts to be soldered. (*See* Abstract).

A person of ordinary skill in the art would not combine the invention of Lürenbaum with the contour foil disclosed in Damsohn because the foil is contoured to solder the profiled separating sheets of a heat exchanger together. The foil is not contoured to solder imbalance masses along the length of a shaft or in a circumferential direction. Therefore, the geometric differences between profiled heat exchanger plates and a shaft would prevent the use of the contoured foil in the application described in Lürenbaum. Accordingly, the contoured foil disclosed in Damsohn could not be combined with the invention disclosed in Lürenbaum.

Further, a person of ordinary skill in the art would also not combine the invention of Lürenbaum with the contour foil disclosed in Damsohn because, as previously discussed, Lürenbaum teaches away from soldering imbalance masses to a shaft.

For at least these reasons, it would not have been obvious to combine the invention of Lürenbaum with the contoured foil of Damsohn given the geometric differences between profiled heat exchanger plates and a shaft. Further, Lürenbaum teaches away from soldering imbalance masses to a shaft. Accordingly, the references are incapable of combination and teach away from one another. Therefore, the Examiner has failed to establish a prima facie case for the combination of Lürenbaum and Damsohn.

Lürenbaum and Damsohn are Non-Analogous Art

Given the teachings of Lürenbaum and Damsohn, the combination of the two references is improper. Lürenbaum is directed to applying imbalance masses to a shaft that can be twisted and experience high shear stresses (*See* lines 1-6), while Damsohn is directed to a solder foil contoured to solder together profiled heat exchanger plates (*See* Abstract, Paragraph [0017]). A cylindrical shaft and a heat exchanger plate are non-analogous art, and as such, one looking to modify the way imbalance masses are applied to a shaft would not look to how the plates of a heat exchanger are soldered. Further, the references are incapable of combination. Therefore, the Examiner has failed to establish a prima facie case for the combination of Lürenbaum and Damsohn.

Dependent Claims 19-20 and 22-27

Dependent claims 19-20 and 22-27 are patentable at least by virtue of their direct or indirect dependence on patentable independent claim 1. In addition, the dependent claims also recite additional features that are independently patentable over Lürenbaum in view of Damsohn.

For example, Lürenbaum fails to teach, suggest or disclose "wherein the at least one balancing weight is first provided with solder material and, thereafter, fixed to the hollow shaft." The Examiner even admits "Lürenbaum does not specifically disclose that the balancing weight is first provided with a solder material." Damsohn also fails to cure this deficiency. However, the Examiner relies on "it would necessarily flow that the solder material would be provided to the

balancing weight before being fixed to the hollow shaft, otherwise there would be no soldering occurring between the balancing weight and the shaft." (*See* Office Action p.4).

Applicants contend that the Examiner's position is incorrect. As stated in Paragraph [0029] of the application, a balancing weight provided with solder eliminates the need for "simultaneous alignment of the solder material with respect to the hollow shaft and balancing weight." Thus it does not necessarily flow from Lürenbaum that the solder material "would be provided to the balancing weight before being fixed to the hollow shaft." Instead, the solder could be applied to the shaft and the balancing weight aligned therewith. "To establish prima facie obviousness of a claimed invention, all the claim recitations must be taught or suggested by the prior art." *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). M.P.E.P. § 2143.03. *Accord*. M.P.E.P. § 706.02(j). Therefore, the Examiner must establish that "wherein the at least one balancing weight is first provided with solder material and, thereafter, fixed to the hollow shaft" is taught or suggested by the prior art.

Further, to the extent that the Examiner contends, or is taking Official Notice, that the recitations found in this claim or any other dependent claim would have been obvious to one of ordinary skill in the art, Applicants respectfully request that the Examiner provide support in the form of an affidavit or prior art reference in the next Office Action, pursuant to 37 CFR 1.104(d)(2) and MPEP § 2144.03.

As another example, Lürenbaum fails to teach "wherein during soldering, a joining force of less than 2000 Newton is exerted on the at least one balancing weight towards the hollow shaft," as recited in claims 25 and 26. In fact, Lürenbaum teaches away from this recitation by suggesting the use of glue to secure the imbalance masses to the shaft. As described in Paragraph [0014] of the application, "welding requires the application of relatively high compressive forces, which can lead to mechanical notches." Similarly, the use of high compressive forces to glue a balancing weight to a hollow shaft could also cause deformation of the shaft. Damsohn also fails to cure this deficiency. Therefore, the Examiner must establish "wherein during soldering, a joining force of less than 2000

Newton is exerted on the at least one balancing weight towards the hollow shaft" is taught or suggested by the prior art.

Since Lürenbaum fails to teach, suggest or disclose all of the recitations in dependent claims 19-20 and 22-27, Applicants respectfully request that the § 103 rejections be withdrawn. Applicants also reserve the right to set forth additional remarks in favor of patentability of the dependent claims in future papers.

Independent Claim 31

Independent claim 31 has been amended to recite, in part, "securing the at least one balancing weight to the at least one location by brazing, wherein a flux-free solder is used. (Emphasis added). Lürenbaum fails to teach, suggest, or disclose each recitation found in the claim as amended. The arguments presented above with respect to claim 1 are equally applicable here. Therefore, independent claim 31 is patentable over Lürenbaum in view of Damsohn. Applicants respectfully request that the rejection of the claim be withdrawn.

2. Lürenbaum and Damsohn further in view of Porter (2,914,642)

Claim 29 was rejected as being unpatentable over Lürenbaum and Damsohn as applied to claim 1 above, and further in view of Porter.

Dependent claim 29 is directly dependent on independent claim 1. The remarks presented above with respect to the combination of Lürenbaum and Damsohn are equally applicable here. That is because Porter also fails to disclose "securing the at least one balancing weight to the at least one location by soldering, wherein a flux-free solder is applied as a foil." In fact, Porter does not disclose the use of a flux-free solder at all. Instead, Porter is directed toward "an apparatus having a controlled atmosphere permitting assemblies to be soldered or brazed by induction heating." (*See* Column 1, lines 15-18). Accordingly, Porter fails to cure at least this deficiency of Lürenbaum and Damsohn.

Therefore, dependent claim 29 is patentable at least by virtue of its dependence on independent claim 1. In addition, dependent claim 29 recites additional features that are independently patentable over Lürenbaum and Damsohn in view of Porter. Accordingly, withdrawal of the rejection is respectfully requested.

3. Lürenbaum and Damsohn further in view of Myers (6,811,633)

Claims 28 and 30 were rejected as being unpatentable over Lürenbaum and Damsohn as applied to claims 1 and 27 above, and further in view of Myers.

Dependent claims 28 and 30 are indirectly and directly dependent on independent claim 1. The remarks presented above with respect to the combination of Lürenbaum and Damsohn are equally applicable here. That is because Myers also fails to disclose "securing the at least one balancing weight to the at least one location by soldering, wherein a flux-free solder is applied as a foil." Instead, Myers discloses use of an adhesive material. "Preferably, the adhesive material is a multi-cure, two part material including an activator part and an adhesive part." (*See* Column 4, lines 40-42). Therefore, Myers does not disclose the use of a flux-free solder. Accordingly, Myers fails to cure at least this deficiency of Lürenbaum and Damsohn.

Therefore, dependent claims 28 and 30 are patentable at least by virtue of their dependence on independent claim 1. In addition, dependent claims 28 and 30 recite additional features that are independently patentable over Lürenbaum and Damsohn in view of Myers. Accordingly, withdrawal of the rejection is respectfully requested.

CONCLUSION

Reconsideration and allowance of the claims as presented are respectfully requested. In view of the above amendments and remarks, Applicants believe the pending application is in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. 66969-0004 from which the undersigned is authorized to draw.

Dated: June 1, 2010

Respectfully submitted,

Electronic signature: /Darcey L. Jacobs/
Darcey L. Jacobs
Registration No.: 64,248
Kristin L. Murphy
Registration No.: 41,212
RADER, FISHMAN & GRAUER PLLC
Correspondence Customer Number: 82078
Attorneys for Applicant